



TITLE:

# GREEN FLUORESCENCE PROTEIN (GFP) DETECTED IN A MEDUSA OF ATORELLA VANHOEFFENI (CNIDARIA, SCYPHOZOA, CORONATAE) IN JAPAN

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Vol. 10, Mar. 2014, pp. 1-2 + 1 pl.**GREEN FLUORESCENCE PROTEIN (GFP) DETECTED IN A MEDUSA OF  
*ATORELLA VANHOEFFENI* (CNIDARIA, SCYPHOZOA, CORONATAE)  
IN JAPAN**

By

**Shin KUBOTA<sup>1</sup> and Ryo MINEMIZU<sup>2</sup>****Abstract**

Green fluorescence protein (GFP) is detected in a coronate scyphomedusa of *Aurelia vanhoeffeni* collected from Osezaki, Shizuoka Prefecture, Japan.

**Introduction**

Epi-fluorescence microscopic observations of individuals of scyphomedusae and scyphopolyps do not usually demonstrate distribution of green fluorescence protein (GFP) as is also rare in hydromedusae (Kubota 2011, 2012; Kubota & Gravili 2011). In the present study, however apparent GFP distribution is found in a coronate medusa of *Aurelia vanhoeffeni* collected in Japan.

**Materials and Methods**

By SCBA diving at Osezaki, Shizuoka Prefecture, Japan, medusae (two males and one immature medusa) of *Aurelia vanhoeffeni* were captured again (see Kubota 2008; Kubota *et al.* 2012) on December 20, 2013 in the depth of ca 50 cm. The seawater temperature was 15°C. These living specimens were placed in a depression slide glass soon after collection and their fluorescence distribution pattern was observed under an epi-fluorescence microscope (Nikon ECLIPSE 80i, Japan) with blue light excitation (using the B-2A filter set), and photographed (Plate 1).

**Results and Discussion**

In all three medusa specimens of *Aurelia vanhoeffeni* here examined (Table 1), green fluorescence protein (GFP) is detected in all (four) gonads and swollen tip of all (six) tentacles as shown in Plate 1, Figs A-B. GFP distribution might be common in the coronate medusae (see Kubota 2012, unpublished data).

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Table 1. Morphology of *Atorella vanhoeffeni* from Osezaki, Shizuoka Prefecture, Japan

| Umbrellar diameter (mm) | No. of tentacles | No. of gonads | No. of sensory organ | No. of gastric filaments | Sex      |
|-------------------------|------------------|---------------|----------------------|--------------------------|----------|
| 8.6                     | 6                | 4             | 6                    | 10, 10, 10, 9            | Male     |
| 7.3                     | 6                | 4             | 6                    | 8, 7, 7, ?*              | Male     |
| 6.4                     | 6                | 4             | 6                    | 9, 8, 7, 0**             | Immature |

\*: not determined \*\*: absent

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### Explanation of plate 1

Figures A-B: Green fluorescence images of medusa of *Atorella vanhoeffeni* collected from Osezaki, Shizuoka Prefecture, Japan.

PLATE 1

